CLAIMS

What is claimed is:

1.   A method of determining orientation of an object from a two-dimensional source, said method comprising:

providing a plurality of library images each having a predetermined object orientation, each of the plurality of library images having detectable pixels;

determining an intensity of said detectable pixels of each of said library images;

providing an object image having detectable pixels;

determining an intensity of said detectable pixels of said object image;

comparing said intensity of said detectable pixels of each of said library images to said intensity of said detectable pixels of said object images to determine a match score for each of said library images;

selecting said library image having the highest match score; and

outputting said predetermined object orientation corresponding to said library image having said highest match score.

2. The method according to Claim 1, further comprising:

calculating the number of said detectable pixels of each of said library images;

calculating the number of said detectable pixels of said object image; and

resizing said object image by the ratio of the square root of the quotient of said number of said detectable pixels of one of said library images and said number of said detectable pixels of said object image.

3. The method according to Claim 1 wherein said step of determining an intensity of said detectable pixels of each of said library images includes setting said intensity of each of said detectable pixels to a binary one if said intensity of said detectable pixel is greater than a predetermined value.

4. The method according to Claim 3 wherein said step of determining an intensity of said detectable pixels of said object image includes setting said intensity of each of said detectable pixels to a binary one if said intensity of said detectable pixel is greater than a predetermined value.

5. The method according to Claim 1 wherein said step of determining an intensity of said detectable pixels of each of said library images includes determining an average pixel intensity of each of said library images if said intensity of said detectable pixel of each of said library image is greater than a predetermined value.

6. The method according to Claim 5 wherein said step of determining an intensity of said detectable pixels of said object image includes determining an average pixel intensity of said object image if said intensity of said detectable pixel of said object image is greater than a predetermined value.

7. The method according to Claim 6, further comprising:

rescaling said intensity of said detectable pixels of said object image by a ratio of said average pixel intensity of said library image to said average pixel intensity of said object image.

8. The method according to Claim 1 wherein said step of comparing said intensity of said detectable pixels of each of said library images to said intensity of said detectable pixels of said object images to determine a match score for each of said library images is accomplished using a Boolean bitwise logical comparison method.

9.   A method of determining orientation of an object from a two-dimensional reference image, said method comprising:

providing a plurality of reference images each having a known object orientation, each of the plurality of reference images having detectable pixels;

calculating the number of said detectable pixels of each of said reference images;

determining an intensity of said detectable pixels of each of said reference images;

providing an object image having detectable pixels;

calculating the number of said detectable pixels of said object image;

determining an intensity of said detectable pixels of said object image;

resizing said object image by the ratio of the square root of the quotient of said number of said detectable pixels of one of said reference images and said number of said detectable pixels of said object image

comparing said intensity of said detectable pixels of each of said reference images to said intensity of said detectable pixels of said object images to determine a match score for each of said reference images;

selecting said reference image having the highest match score; and

outputting said predetermined object orientation corresponding to said reference image having said highest match score.

10. The method according to Claim 9 wherein said step of determining an intensity of said detectable pixels of each of said reference images includes setting said intensity of each of said detectable pixels to a binary one if said intensity of said detectable pixel is greater than a predetermined value.

11. The method according to Claim 10 wherein said step of determining an intensity of said detectable pixels of said object image includes setting said intensity of each of said detectable pixels to a binary one if said intensity of said detectable pixel is greater than a predetermined value.

12. The method according to Claim 9 wherein said step of determining an intensity of said detectable pixels of each of said reference images includes determining an average pixel intensity of each of said reference images if said intensity of said detectable pixel of each of said reference image is greater than a predetermined value.

13. The method according to Claim 12 wherein said step of determining an intensity of said detectable pixels of said object image includes determining an average pixel intensity of said object image if said intensity of said detectable pixel of said object image is greater than a predetermined value.

14.   The method according to Claim 13, further comprising:

rescaling said intensity of said detectable pixels of said object image by a ratio of said average pixel intensity of said reference image to said average pixel intensity of said object image.

15.   The method according to Claim 9 wherein said step of comparing said intensity of said detectable pixels of each of said reference images to said intensity of said detectable pixels of said object images to determine a match score for each of said reference images is accomplished using a Boolean bitwise logical comparison method.